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ABSTRACT

The development of a readability formula designed to determine the readability level of German instructional materials at the elementary level is discussed in this paper. The readability formula which was developed is called the German Readability Graph and is similar to the Fry Readability Graph. Syllables and number of sentences are counted per 100 word samples and charted on the graph. German instructional materials were used to supply sample passages for testing of the instrument. The German Readability Graph is printed in the appendix. (MKM)

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An Exploratory Effort to Design a Readability Graph for German Material +)

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Introduction:

In the English language we have an abundance of formulas and other ways to determine the readability levels of materials. As George R. Klare points out in his article, "most of the published work in readability measurement... has been done with English-language materials". (1) Klare, by the way, gives an excellent review of the research available in this area. Devices to determine readability at the present may serve the reading specialist or researcher and the classroom teacher alike, according to individual need and purpose. What had in the "stone age" of English reading been merely an educated guess and/or personal experience in classifying texts according to difficulty, can nowadays and could for a span of time be aided scientifically and ascertained through validity checks.

+) The research presented has been conducted as an independent study at the Reading Department of SUNYA. Special thanks go to Dr. Richard Allington for his advice, guidance, and encouragement, as well as to Dr. R. Bamberger from the International Institute for Children's, Juvenile and Popular Literature in Vienna/Austria, Prof. George R. Klare from the Ohio University, and Prof. Dr. Reinhard Tausch from the Psychological Institute of the University of Hamburg/Germany, for their reassurance and/or publications, and to the Auer Verlag, Donauwörth, Bayerischer Schulbuchverlag, München, Klett Verlag, Stuttgart, and my friend Kuni Schunter for all the free samples of German readers they supplied.

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The author of this research attempt actively used several readability formulas, as well as the Fry graph (2), as a student of Reading and as a classroom teacher, and found them extremely helpful in classifying texts according to levels and fitting a student with proper reading material. Gradually, though, a question arose that grew into a research problem: How is the readability level of German material determined? The author's interest in this area derives from her having been raised and educated in Germany and from years of experience teaching elementary school in Germany and in the U.S., as well as being a high school teacher of German to date.

Initial attempts to use any of the readability measurements meant for the English language and taking into account its specific language variables, such as word length, sentence length, word frequency, and the like, failed inevitably. This does not necessarily exclude any of the above mentioned or other factors from running somewhat parallel in the two languages.

Another important phase of this research included the possible gathering of already existing German readability formulas. Klare (3) mentions two: one by Walters (1966) to be used with theological literature, the other by DeLandsheere (1970), which is "a German-language version of Flesch's Reading Ease readability formula" (4). DeLandsheere's publication (5) unfortunately was not readily available on this continent, and Prof. Klare assured through personal correspondence (6) that he had not heard of any other readability formulas for German.

Through extended personal correspondence, then, the author contacted West German publishers of school books and reading and psychology authorities in Germany, Austria, and France (cf. also

end of article: Indebtedness): The fact is that attempts to determine reading levels for German materials in a more scientific way are being made, and that such pioneer work is of special interest to Dr. Richard Bamberger from the International Institute for Children's Literature in Vienna/Austria and his staff (7).

The Austrian Institute apparently experiments with the well-known Cloze procedure quite successfully. A formula did not yet result from any of their efforts. - The German publishers assured the author that they use either rules of thumb together with experienced staff and/or certain student dictionaries to classify any given text into a certain student level (8). They also seem to be very concerned with size and type of print and illustrative materials when editing books for use in schools. - Prof. Dr. Reinhard Tausch (9) deals in depth with "Verständlichkeit" of German print: "Verständlichkeit" here means distinctiveness , clarity, comprehensibility of written material, with his subdivisions of "Einfachheit" (simplicity of style), "Gliederung-Ordnung" (organizational structure and order), "Kürze-Prägnanz" (brevity- conciseness), and "Zusätzliche Stimulanz" (additional stimuli), for which he introduces samples and guidelines for usage.

Since the answers found to the initial question on how the reading level of German materials is determined, were not altogether exhaustive and reassuring, the author decided to venture some of her own efforts and explore in the direction of any regularities on specific levels of existing German readers. Word frequency findings would surely be both revealing and utterly helpful in eventual culmination in a valid formula, yet this is too difficult a task to be attempted without computer assistance. So it was decided to work with sentence and word lengths alone.

Method:

Fry's "Readabilty Graph" seems to be the quickest method for the classroom teacher to use with English texts for readability checks. In his article, Klare (11) assures the reader that it furthermore correlates highly with some other popular formulas.- Following is the method used to establish a readability graph for the German language, which, naturally, is only a first attempt that would have to be extended and validated.

This research was originally intended to include only grades one, two, three, and four, for which most materials were obtained, but later on rather vaguely extended to include upper grade levels with the eighth included.

Books, Levels, and Dates:

From Table 4 in the Appendix it is to be seen that only West German basal readers were used. They all date from the post war (WWII) era. Most of them were published within the last ten years and are still widely in use in German classrooms. Some books from the late forties and fifties are no longer in use.

Sampling of readers was possible on the following levels: five from first grade, six from second grade, four from third grade, five from fourth grade, one from fifth grade, one from sixth grade, two from fifth-sixth grade, two from seventh-eighth grade, and one from eighth grade. (cf. Tables 1 and 2 in the Appendix). Most of the textbooks represent the southern area of Germany. Books of fifth grade and up are of "Hauptschule- or Volksschule-" level, which is the most basic one. Furthermore, it might be of interest to the American reader to note that it used to be quite common in Germany to have certain reader levels

combined in one volume: usually third and fourth, fifth and sixth, seventh and eighth, sometimes even fifth through eighth, and that often there was no distinction made inside the book itself as to in which grade a particular text had to be read.

Some of the readers contain what is known as Gothic type print; the books used in this sampling were largely printed in clear, modern lettering, in fact, Gothic type print in basals seems to have been phased out during the fifties, but is represented as early as second grade level in texts of this research.

Samples:

Between fifteen and twenty-one random samples of 100 words apiece were counted off in each textbook for grades two through eight, between eleven and fifteen samples for grade one (cf. Table 2, Appendix). Seventeen or eighteen samples per book appeared to be an adequate minimum in order to obtain a representative average, yet in the first grade readers many samples had to go over several pages, and the number of samples sometimes even represents the entire book.

The number of pages in the books was divided by the number of samples desired, and samples were taken on appropriate pages throughout the texts. Poems, parts of dramas or plays, and the like were not included, the same is true for headlines. If an illustration or atypical text, such as mentioned above, was present on a page due for sampling, either the page before or after was chosen, or the part below a poem, and so on. Usually, sampling took place from the top of a page, which represents beginnings and middles of coherent texts, rarely ends. When a given page contained less than 100 words of adequate text, preceeding or following text was included.

Certain rules had to be developed as to what represented a word in the German language for this purpose and followed throughout on all grade levels: In hyphenated words each word part was counted as a separate word, e.g. Personen- und Lastkraftwagen = 3 words, Regen-Otto = 2 words, einsam-wilden = 2 words. Contractions with apostrophies were treated as one word if one part did not represent a different speaking unit, such as in kannst's = 1 word, and as two words when both parts contained at least one syllable: wie'ne = 2 words. Numbers, whether printed in numerals or with letters, were counted as one word each, numerals, whether ordinals or cardinals, were also counted as one syllable only.

Syllables per 100 word samples were counted next. Speaking units were each counted as one syllable. Proper names and words of foreign origin were treated in a way a German not having studied the respective language in depth would pronounce them: e.g. Père Claude = 2 words, 1 syllable each.

Number of sentences per 100 word samples and fractions thereof in decimals concluded the sampling procedures. Periods, exclamation and interrogation marks were generally regarded to be signals for the termination of a sentence. The latter two were not counted as such if the sentence continued with a lower case letter, e.g. "Und er rief, ach! wie er sich freute!". A part containing direct speech set off with commas was counted as one sentence, e.g. "Komm her!", sagte die Mutter. If the direct speech part was set off with colons, two sentences were counted because it was felt that these often quite lengthy parts represented two different units of thought, which criterion was used for judgement of sentence number in the last instance, anyway. Example for colons, from a fourth grade reader: 'Schnurstracks eilte er von

dannen, und in sein Reisebuch schrieb er: "Oberheudorf ist klein, schmutzig und häßlich."[1] (= 2 sentences).

Much of the sentence count in first grade basals had to be estimated because punctuation usually only sets in during the course of the book. Again, the most important criterion was to estimate units of thought. These are quite short in beginning readers, many times represented by a line each, special indentations, etc., yet not always recognizable through capitalization.

The findings from each textbook were entered on a separate sheet with word and syllable counts for each sample, and its page number. Average number of syllables and sentences were furthermore computed for each textbook and for all textbooks on each level (see Table 1, Appendix).

Plotting: (cf. Graph, Appendix)

In order to plot all results from syllable and sentence counts from the 100 word samples, a graph was made, similar to Fry's readability graph for English texts (2). Along the abscissa, numbers of syllables per 100 words are to be found, ranging from 125 to 189, with the fewer syllables on the left hand side. Vertically, along the ordinate, numbers of sentences per 100 words are entered, from 2.4 to 20.0, the shorter sentences being at the bottom. This way, the more sophisticated texts, containing numerous syllables and fewer sentences, are aiming towards the upper right-hand corner of the graph, whereas Fry's are to be found in the lower right-hand corner.

Originally, for working purposes, averages for each book had been entered also to visualize the differentiation among books and levels. In the graph contained in the Appendix, these are

omitted; however, averages for each level are entered. These latter ones are of utmost importance, because through the centers of their connection lines, lines dividing one grade level from the next were drawn. The slant of these divider lines was determined by the absolute numbers of samples counted for each grade level. For the exploratory purposes exposed in this article, these constructions apparently yield sufficient accuracy, as is to be seen in the following part, Results, below.

Unlike Fry, the author was unable to distinguish between third and fourth grade levels in the graph: Attempts were made to do so during original plotting, yet did result in an imaginary line cutting the third-fourth grade area at an awkward angle and partially overlapping with areas of grades below and above. As a matter of fact, the combination of third and fourth grades into one level on the graph seems justifiable to the practitioner: a) third and fourth grade readers used to be combined in one volume for a long time, and b) there really isn't that much of a distinction between the two as fas as number of syllables and sentence length are concerned. In reality, third and fourth grades are an important last step in the "Grundschule", which is, however, set off clearly from the upper levels following, be it "Hauptschule" (fifth grade etc.), or one of the more academically oriented school levels like "Realschule" (or whatever it may be called in the different regions), and "Gymnasium".

The areas for levels five-six and seven-eight were more of a by-product while working on the graph: fewest books were available for these. They were included, however, because even the few samples used resulted in further gradation. The divider line between seven-eight and 8+ levels is purely an estimate.

Apparently, none of the samples fell into the area shaded in the upper left corner of the graph, which represents long sentences (or few sentences per 100 words counted off) and relatively few syllables. The reason is obvious. Also, in the lower right corner of the graph, an area was shaded where plotting showed few irratic and erraneous results.

The first grade area is to be extended downward: many samples have more sentences than shown on the graph: over twenty. The same is true for the area of grade 8+ : it is conceivable that it has to be extended upward as well as sideways, as texts become more complex toward upper levels.

Results:

The German Readability Graph found in the Appendix clearly shows an increase in number of syllables and a decrease in number of sentences per 100 word samples towards higher grade levels, which naturally has to be expected, since logically more difficult texts result in higher grade level categorization, and more difficult texts in the English, as well as in the German language are made up of more syllables and more complex sentence structure.

The area depicted as 1 (grade 1) is the most homogeneous and the largest: Students in first grade start with two-word/ low-syllable sentences and progress quite rapidly to a certain point where sentences become longer and words more complex. Area 2 (grade 2) is also quite large. Grade two basals often contained some rather simple texts (falling into area 1) and frequently harder texts (falling into area 3/4 or higher). Area 3/4 (grade level 3 and 4) is relatively small. Homogeneity is not too well

preserved any more: many samples from grades three and four are outside the area, whereas numerous other grade level samples are within this area. The latter is also true for area 5/6 (grades five and six), where a certain amount of dispersity is to be observed. Because of the estimated upper line of area 7/8 (grade level seven and eight), definite results for this area are not available.

Table 2 in the Appendix does not only show the number of samples taken from each book and level, but also the absolute numbers of samples "on target", that is, right within the designated areas of the graph, the absolute numbers diverging by one or more level areas, but also the percentage of samples that fall into certain areas:

For grade one, 83% of seventy samples taken were right in area one, 91% of the total in areas one and two, combined. Of the 105 text samples taken from second grade readers, only 30.5% are in the second grade area of the graph, whereas 82% are in either areas 1, 2 or 3/4. The percentage of samples falling within the area itself is lower for the 164 third and fourth grade samples: only 29%. However, 77% of these samples are within one grade level area or in grade level area. For grade level 5/6, 72 samples were made: 40% are within the area of the graph, 81% either in area 3/4, 5/6 or in estimated area 7/8.

To this point, it appears to the author, that, although only a limited amount of sampling was conducted, which is especially true for grades five, six, seven, and eight, grade level areas for number of syllables and sentence length (that is, number of sentences per 100 words) can reasonably be assumed to

exist in a logical continuum for German texts, similar to the ones used in the Fry Graph. In general, the higher the syllable count and the lower the sentence count in a German text, the higher up its grade level designation is and should be.

Table 1 in the Appendix clearly shows this numerical increase in syllable count and decrease in number of sentences as one proceeds to higher grade levels. As is also to be seen from this table, the same holds true within certain publishing houses, yet not necessarily from one publisher to the next. No significant differences between geographic regions of Germany, where readers are published, and number of syllables and sentences were found. Date of publication also appears to play a minor role.

In summary, the author wishes to state that for all 411 samples counted on grade levels one, two, 3/4, and 5/6 of West German readers, at least 75% of them fall within the so designated areas or no more than one area up or down, when plotted on the presented German Readability Graph.

Discussion:

These above-mentioned results seem to be of revealing significance in the field of German readability determination. As was pointed out in the Introduction, not much, if anything, is, as of today, available to determine the readability level of any given German school material. Therefore, this first attempt to develop a German Readability Graph may very well represent a big step forward in a new direction in reading research. Eventually, it could be made available to educators and all other people dealing with graded text materials. It would represent

a rather rapid way of determining whether a text in question and a particular student or a certain textbook go together.

The author is aware of the limitations this first German Readability Graph has: The graph was developed with only a limited number of samples and needs to be validated not only through the use of more German readers, but also other textbooks meant for different grade levels. This might very well shift its divider lines. It is furthermore conceivable to extend the graph upward to include more, that is, higher grade levels.

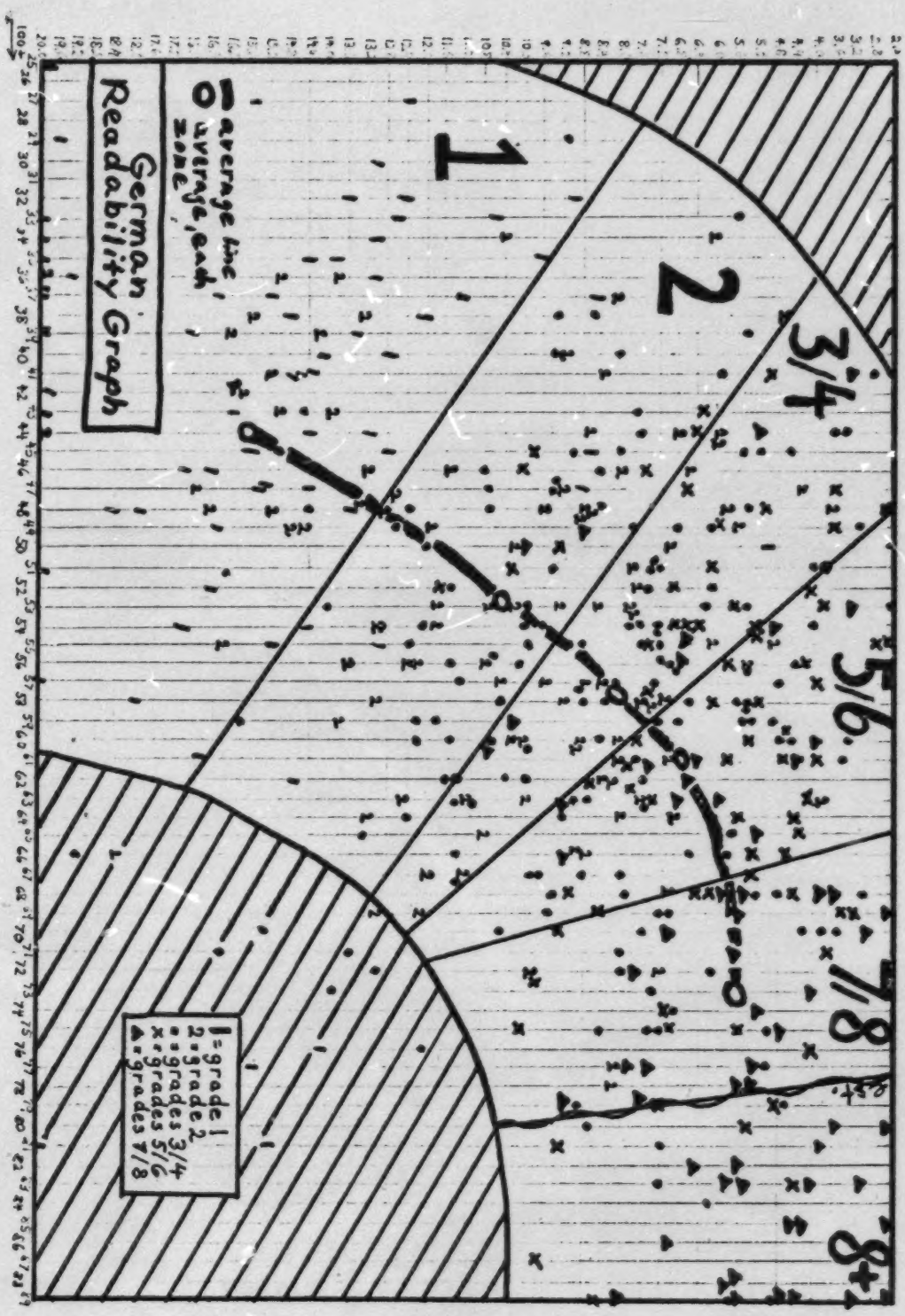
Thoughts have been given to possible reasons for dispersity of grade level samples. Reasons could be of various nature. It is thinkable, though, that it were only natural to find some off-level material in each reader in order to challenge the gifted and pamper the slow learner. Furthermore, wider dispersities could directly derive from the fact that, as far as the author knows, no German textbook company uses a readability formula or graph of any kind in choosing appropriate texts, and that, therefore, the rather personal assignment of texts to certain grade levels might be at fault at times and should be reconsidered.

A readability graph has its logical limits: there are texts for which syllable and sentence counts alone do not reveal the degree of difficulty which may be contained in the train of thought. There are also instances, where one might try to beat the graph by selecting short, yet low-frequency words to construct a sequence of rapidly running short sentences. Grade level designations according to any graph would be falsified(cf.2, Fry).

The text has to be present and must have been written without a formula or this graph in mind.

As Fry's graph for the English language was compared with this one, an interesting fact was discovered, which should not be passed by unnoticed and which was, incidentally, originally quite unsuspected: If one takes a rough mean for each of Fry's and for each of this Readability Graph's grade level areas, there is a certain correlation between the two. In numbers of syllables, the German averages are leading, by 25 to 37 syllables per 100 counted words (it is commonplace that the average German word contains more syllables than the average English one), yet the numbers of sentences per 100 words were rather close for corresponding levels. Both is shown in Table 3 in the Appendix. Up to grades 3/4, the English sentence seems to be slightly longer in word count, yet from grades 5/6 on the German sentence might become longer than its English counterpart.

Much needs to be done in the future. Not only will it be necessary to challenge this first draft of a German Readability Graph and validate and extend it upward, but also interesting comparisons between the English and the German languages could result.



Appendix: Graph

Table 1: Comparison of Averages for Syllable and Sentence Counts per 100 Word Samples by Book and by Level

Grade	Book	Year published	Syllables per 100 words	Sentences per 100 words
1	Auer	1974	146.72	16.39
1	Burgbücherei	1971	143.86	17
1	Klett	1972	138.28	14.71
1	Bunte Welt	1946	154.26	16.55
1	München	1948	136.6	14.2
1	all five books		143.87	15.76
2	Bayr. Schulbuch.	1973	157.9	10.76
2	Klett	1973	149.8	10.8
2	Schwarz/weiß	1970	152.3	8.88
2	Diesterweg	1970	150.9	11
2	Auswahl	1969 ?	151.9	12.2
2	Gemeinschaftsverlag	1946	154.2	7.78
2	all six books		152.9	10.36
3	Bayr. Schulbuch.	1973	158.38	8.25
3	Klett	1973	149.3	8.85
3	Diesterweg	1968	157.45	9.19
3	Schwarz/weiß	1967	158.41	7.95
4	Bayr. Schulbuch.	1973	164.6	8.93
4	Klett	1973	155.9	7.74
4	Hirschgraben	1959	154.94	7.68
4	Schwarz/weiß	1967	157.58	8.02
4	Diesterweg	1967	162.83	7.47
3/4	all nine books		157.6	8.24
5	Kein schöner Land	1959	162.2	6.8
6	Kein schöner Land	1959	162.4	6.88
5/6	two above together	1959	162.3	6.84
5/6	Bayr. Lesebuch	1948	158.7	5.2
5/6	Gemeinschaftsverlag	1954	161.3	7.9
5/6	all above, this level		161.15	6.69
7/8	Bayr. Lesebuch	1947	171.15	5.7
7/8	Gemeinschaftsverlag	1957	175.2	5.43
8	Klett	1972	174.09	5.97
7/8	all above, this level		173.17	5.57

Table 2: Validity Check of All Samples Taken for the German Readability Graph Presented

Gr.	Book	Yr.	On targ	+1 area	-1 area	off more	off range	tot. no.	% on target	%±1 area	% 0±1 area	%off more	%off range
1	Auer	74	11	-	-	-	-	11	100%	-	-	-	-
1	Burg	71	11	1	-	2	1	15	73.$\bar{3}$	6.$\bar{6}$	86.$\bar{6}$	13.$\bar{3}$	6.$\bar{6}$
1	Klett	72	14	-	-	-	-	14	100%	-	-	-	-
1	Bunte	46	9	3	-	-	3	15	60%	20%	80%	-	20%
1	Mün.	48	13	2	-	-	-	15	86.$\bar{6}$	13.$\bar{3}$	100%	-	-
1	tot/av.		58	6		2	4	70	82.8	8.6	91.4	2.8	5.7
2	Bayr	73	3	8	4	4	2	21	14.3	57.1	71.4	19%	9.5
2	Klett	73	7	3	5	2	-	17	41.2	47%	88.2	11.8	-
2	Schw	70	6	5	1	3	-	15	40%	40%	80%	20%	-
2	Dies	70	6	3	6	4	-	19	31.6	47.4	78.9	21%	-
2	Ausw	69?	6	5	6	1	-	18	33.$\bar{3}$	61.$\bar{1}$	94.$\bar{4}$	5.$\bar{5}$	-
2	Gem.	46	4	8	-	3	-	15	26.$\bar{6}$	53.$\bar{3}$	80%	20%	-
2	tot/av.		32	54		17	2	105	30.5	51.4	81.9	6.2	1.9
3	Bayr	73	5	4	5	4	-	18	27.$\bar{7}$	50%	77.8	22.2	-
3	Klett	73	10	-	7	2	-	19	52.6	36.8	89.5	10.5	-
3	Dies	68	4	2	8	5	1	20	20%	50%	70%	25%	5%
3	Schw	67	6	5	3	3	-	17	35.3	47.1	82.3	17.6	-
4	Bayr	73	5	4	2	4	3	18	27.$\bar{7}$	33.$\bar{3}$	61.1	22.2	16.7
4	Klett	73	6	6	6	2	-	20	30%	60%	90%	10%	-
4	Hir.	59	3	5	3	6	-	17	17.64	47.1	64.7	35.3	-
4	Schw	67	5	6	3	1	2	17	29.4	52.9	82.3	5.9	11.8
4	Dies	67	4	5	4	4	1	18	22.$\bar{2}$	50%	72.$\bar{2}$	22.$\bar{2}$	5.$\bar{5}$
3/4	tot/av.		48	78		31	7	164	29.3	47.6	76.8	18.9	4.3
5	Kein	59	7	2	4	5	-	18	38.$\bar{8}$	33.$\bar{3}$	61.$\bar{1}$	27.$\bar{7}$	-
6	Kein	59	5	6	4	3	-	18	27.$\bar{7}$	55.$\bar{5}$	72.$\bar{2}$	16.$\bar{6}$	-
5/6	Bayr	48	10	3	3	1	1	18	55.$\bar{5}$	33.$\bar{3}$	88.$\bar{8}$	5.$\bar{5}$	5.$\bar{5}$
5/6	Gem.	54	7	3	4	4	-	18	38.$\bar{8}$	38.$\bar{8}$	77.7	22.$\bar{2}$	-
5/6	tot/av.		29	29		13	1	72	40.3	40.3	80.6	18%	1.4
7/8	Bayr	47	8	2	4	5	1	20	40%	30%	70%	25%	5%
7/8	Gem.	57	8	3	4	5	-	20	40%	35%	75%	25%	-
8	Klett	72	4	7	4	5	-	20	20%	55%	75%	25%	-
7/8	tot/av.		20	24		15	1	60	33.$\bar{3}$	40%	73.$\bar{3}$	25%	1.$\bar{6}$

Table 3: Comparison of Anticipated Grade Level Area Averages in Sentence and Syllable Counts for the Fry and German Readability Graphs

Grade level area	Average no. of sentences per 100 word samples			Average no. of syllables per 100 word samples		
	German	Fry	German-Fry Index	German	Fry	German-Fry Index
1	15.76	15	-.8	143.87	120	24
2	10.36	12	-1.6	152.9	120	33
3/4	8.24	9	-.8	157.6	122	34
5/6	6.69	6.7	+.3	161.15	126	36
7/8	5.57	5.3	+.3	173.17	136	37

Table 4: Bibliography of German Basals Used, by Grade Levels, All West German

Grade 1: Bunte Lesewelt. Theodor Kuch/Adelheid Merkel. Donauwörth: Verlag Ludwig Auer, 1974

Bei uns daheim. Rudolf Schaal, Ruth Gümbel, Walter Klingenburg. Esslingen a. N.: Burgbücherei Wilhelm Schneider, 1971 (8)

Unsere neue Fibel. Walter Müller/Heinz Kampmeier. Stuttgart: Ernst Klett Verlag, 1972

Bunte Welt. Helene Beuermann/ Dr. Carl Will. Hamburg: Verlag Heinrich Ellermann, 1946

Mein erstes Buch zum Anschauen, Zeichnen, Lesen und Schreiben. Hans Brückl. München: Bayerischer Schulbuch-Verlag, 1948 (2)

Grade 2: Mein Lesebuch für das 2. Schuljahr. diff. authors. München: publ. above, 1973 (4)

Lesebuch für das 2. Schuljahr der Grundschule. diff. authors. Klett publ. above, 1973

schwarz auf weiß, Primarstufe, Texte 2. diff. authors. Darmstadt/Hannover: Hermann Schroedel Verlag KG and Bühl/ Baden: Verlag Konkordia AG. 1970

Deutsches Lesebuch für die Grundschule für das zweite Schuljahr. diff. authors. Frankfurt/Main, Berlin, München: Verlag Moritz Diesterweg, 1970 (5)

auswahl, Lesebuch für Schulen, Grundschule 2. Schuljahr. edited. Bochum: Verlag Ferdinand Kamp, 1969 ?

Lesebuch für die Volksschulen, 2. Schuljahr. no author. Stuttgart: Gemeinschaftsverlag ..., 1946

Grade 3: Mein Lesebuch für das 3. Schuljahr. diff. authors. München: publ. above, 1973 (3)

Lesebuch für das 3. Schuljahr der Grundschule. diff. authors. Klett publ. above, 1973

Deutsches Lesebuch für das dritte und vierte Schuljahr. diff. authors. Diesterweg publ. above, 1968

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NOTE: The textbooks are listed above in the order in which they appear in the preceeding tables. Keywords which serve for their identification in the tables are underlined unless they are contained in the titles.

References in the text:

(1) Klare article, p. 91

(2) Fry book and graph

(3) Klare article, pp. 93 and 94

(4) Klare article, p. 94

(5) Klare article, bibliography p. 99, and DeLandsheere's book, pp. 225 - 234, esp. p. 229 ff. De Landsheere here reports of various applications of Flesch's Reading Ease readability formula to texts in French and German. Flesch, in the formula cited by DeLandsheere, heavily weights both average number of words per sentence and average number of syllables per 100 words (cf. with the presented graph here!). The factor constants used for the English language are not applicable for the German language in the same degree, yet it is possible to grade German texts objectively through the use of a "reading ease" index. De-Landsheere further emphasizes the higher syllable counts in the French and, even more so, in the German languages. A ready solution or formula is not offered in this publication.

(6) personal correspondence, Klare - Schwartz, September 1975

(7) Klare's letter and personal correspondence, Bamberger - Schwartz, several in 1975

(8) personal correspondence with publishers Klett, Auer, Bayerischer Schulbuchverlag, 1974 - 1975

(9) personal correspondence, Tausch - Schwartz, and Tausch book, p. 11 ff. (corr. 1975)

(10) correspondence with ERIC Clearinghouse, Center for Applied Linguistics, 1975 - 1976, and ERIC computer search at SUNYA, fall 1975

(11) Klare article, p. 79

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